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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,084	02/20/2004	Nicholas A. Sanders	HYP-046C2	1162
21323	7590	08/16/2005	EXAMINER	
TESTA, HURWITZ & THIBEAULT, LLP			VAN, QUANG T	
HIGH STREET TOWER			ART UNIT	
125 HIGH STREET			PAPER NUMBER	
BOSTON, MA 02110			3742	

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/784,084	Applicant(s) SANDERS ET AL.	
	Examiner Quang T. Van	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 64-81 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 64-71 and 74-81 is/are rejected.
- 7) ☒ Claim(s) 72 and 73 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 64-71, 74-78 and 80-81 are rejected under 35 U.S.C. 102(b) as being anticipated by Aston (US 5,587,093) cited by applicants. Aston discloses a safe potential arc channel enhance arc head comprising an electrically conductive crucible (Figure 1C, col. 5, lines 5-10), for dispensing a jet stream (37, Figure 2B) of an electrically conductive fluid; and a power source (36, Figure 2B) including at least a first electrical connection (-) to the fluid within the dispenser and a second electrical connection (+) to the jet stream (37) external to the dispenser. With regard to claim 75, "said electrical connection comprises a feedstock of the conductive fluid". By definition "Feedstock" is the raw material furnished to a machine or process" (<http://www.accessscience.com/server-java/Arknoide/science/AS>). Aston discloses a plasma gas (15) being a raw material, which is considered a feedstock.

3. Claims 64, 66-67, 74, 76-77 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Gage (US 2,862,099). Gage discloses an arc torch process with reactive gases comprising an electrically conductive crucible (Figure 5, 42), for dispensing a jet stream (Arc, Figure 5) of an electrically conductive fluid; and a power source (S, Figure 5) including at least a first electrical connection (-) to the fluid within the dispenser and a second electrical connection (+) to the jet stream (Arc) external to the dispenser

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aston (US 5,587,093) cited by applicants in view of Blevins et al (US 5,906,796). Aston discloses substantially all features of the claimed invention except the disk comprising a material selected from one of Yttria-Stabilized-Zirconia, Magnesia-Stabilized-Zirconia, Calcia-Stabilized-Zirconia, boron nitride-zirconia-silicon carbide, boron nitride, Cubic Zirconia, Alumina, Silica, Silica Composites, Zirconium Diboride. Blevins discloses a disk comprising a material selected from one of Yttria-Stabilized-Zirconia, Magnesia-Stabilized-Zirconia, Calcia-Stabilized-Zirconia, boron nitride-zirconia-silicon carbide, boron nitride, Cubic Zirconia, Alumina, Silica, Silica Composites, Zirconium Diboride (col. 4, lines 28-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Aston a disk comprising a material selected from one of Yttria-Stabilized-Zirconia, Magnesia-Stabilized-Zirconia, Calcia-Stabilized-Zirconia, boron nitride-zirconia-silicon carbide, boron nitride, Cubic Zirconia, Alumina, Silica, Silica Composites, Zirconium Diboride as taught by Blevins in order withstand in a high working temperature.

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6. Claims 72-73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

7. Applicant's arguments with respect to claims 64-81 have been considered but are moot in view of the new ground(s) of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T. Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QV  
August 11, 2005



Quang T Van  
Primary Examiner  
Art Unit 3742